

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Previously Presented) A method for tolerating writing variations in input data when processing a data record for finding a counterpart in a reference data set, the method comprising the steps of:

determining in the data record a value of a data field, the data field representing an identifier,

determining, by a processor, from a set of predetermined identifier values at least one synonym candidate for the value of the data field using a candidate selection criterion,

determining if a synonym candidate and the value of the data field fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, wherein said at least one quality parameter takes into account writing variations that are evaluated based on differences in the value of the data field and the synonym candidate, and when the predetermined synonym acceptance criterion is fulfilled, associating the value of the data field and the synonym candidate as synonyms and automatically updating a synonym set representing known writing variations for the identifier in a computer readable database and referencing to respective entries in the reference data set by adding the value of the data field to the synonym set without intervention of a user before searching for a counterpart, and

searching for the counterpart for the data record by comparing the value of the data field to entries of the reference data set and/or the synonym set after the step of determining if the predetermined synonym acceptance criterion is fulfilled, wherein, if

the synonym set was updated, said comparison to the synonym set comprises comparison to the updated synonym set in the computer readable database.

2. (Original) A method as defined in claim 1, wherein the at least one synonym candidate is determined using a candidate selection criterion depending at least on the value of the data field and on a synonym candidate.

3. (Original) A method as defined in claim 2, wherein, the candidate selection criterion takes into account how similar a synonym candidate and the value of the data field sound.

4. (Original) A method as defined in claim 2, wherein the candidate selection criterion specifies that at least a predetermined part of the value of the data field is identical to a predetermined part of a synonym candidate.

5. (Previously Presented) A method as defined in claim 2, wherein the candidate selection criterion takes into account also a further data field of the data record, said further data field representing a second identifier.

6. (Canceled)

7. (Previously Presented) A method as defined in claim 1, wherein at least one quality parameter takes into account at least one of the following quantities:

a number of changes required for converting the value of the data field to be identical to a synonym candidate; a proportion of identical characters in the value of the data field and in a synonym candidate; and a difference between the length of the value of the data field and the length of a synonym candidate.

8. (Original) A method as defined in claim 7, wherein the number of changes required for converting the value of the data field to be identical to a synonym candidate is calculated using the Levenshtein distance.

9. (Original) A method as defined in claim 7, wherein the proportion of identical characters takes into account the order of the characters.

10. (Previously Presented) A method as defined in claim 1, wherein a first quality parameter is evaluated for each synonym candidate and at least a second quality parameter is evaluated at least for the synonym candidate(s) having the best first quality parameter.

11. (Previously Presented) A method as defined in claim 1, wherein the synonym acceptance criterion requires that there is only one synonym candidate having the best at least one quality parameter.

12. (Previously Presented) A method as defined in claim 1, wherein at least two quality parameters are evaluated for each synonym candidate and the synonym candidate acceptance criterion specifies a threshold for one of the at least two quality parameters, the threshold being dependent on a further one of the at least two quality parameters.

13. (Previously Presented) A method as defined in claim 1, wherein the search for the counterpart involves comparison of the value of the data field to a synonym set relating to the identifier, members of said synonym set referring to respective predetermined identifier values, and when the predetermined synonym acceptance criterion is fulfilled, the value of the data field is added to the synonym set as a member

referring to the synonym associated with the value of the data field before the search for the counterpart.

14. (Previously Presented) A method as defined in claim 1, wherein determining the at least one synonym candidate is discarded, if a predetermined discard criterion is fulfilled.

15. (Original) A method as defined in claim 14, wherein the predetermined discard criterion specifies that the value of the data field is identical to one of the predetermined identifier values.

16. (Original) A method as defined in claim 14, wherein the search for the counterpart involves the synonym set and the predetermined discard criterion specifies that the value of the data field is at least one of the following: one of the predetermined identifier values, and a member of the synonym set.

17. (Previously Presented) A method as defined in claim 14, wherein the predetermined discard criterion takes into account a value of a second data field in the data record.

18. (Previously Presented) A method as defined in claim 1, wherein information indicating the at least one synonym associated with the value of the data field is added to the data record.

19. (Original) A method as defined in claim 18, wherein a copy of the data record is made for each synonym associated with the value of the data field.

20. (Previously Presented) A method as defined in claim 1, wherein the identifier relates to a name of one of the following: a geographical entity, a person and an organization.

21. (Previously Presented) A method of updating a synonym set stored in a computer readable database to tolerate writing variation in input data when the synonym set is used in searching for counterparts for data records, wherein a data record contains a data field representing an identifier, and members of the synonym set are first identifier values referring to respective second identifier values, the second identifier values being predetermined identifier values, the method of updating the synonym set comprising the steps of:

determining, by a processor, among the predetermined identifier values at least one synonym candidate relating to the value of the data field in the data record using a candidate detection criterion,

determining if the value of the data field and a synonym candidate fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, wherein said at least one quality parameter takes into account writing variations that are evaluated based on differences in the value of the data field and the synonym candidate, and

when the predetermined synonym acceptance criterion is fulfilled, automatically adding the value of the data field to the synonym set in the computer readable database as a member referring to the synonym candidate without intervention of a user and before the synonym set is used in searching for a counterpart for the data record from the synonym set.

22. (Original) A method as defined in claim 21, wherein the synonym set is empty before adding the value of the data field to the synonym set.

23. (Original) A method as defined in claim 21, wherein the synonym set contains at least one member before adding the value of the data field to the synonym set.

24. (Previously Presented) A computer-readable record medium having stored thereon computer-executable instructions for causing a computer to perform a method for tolerating writing variations in input data when processing a data record for finding a counterpart in a reference data set, the method comprising the steps of:

determining in the data record a value of a data field, the data field representing an identifier,

determining from a set of predetermined identifier values at least one synonym candidate for the value of the data field,

determining if a synonym candidate and the value of the data field fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, wherein said at least one quality parameter takes into account writing variations that are evaluated based on differences in the value of the data field and the synonym candidate, and when the predetermined synonym acceptance criterion is fulfilled, associating the value of the data field and the synonym candidate as synonyms and automatically updating a synonym set representing known writing variations for the identifier and referencing to respective entries in the reference data set by adding the value of the data field to the synonym set without intervention of a user before searching for a counterpart, and

searching for a counterpart for the data record by comparing the value of the data field to entries of the reference data set and/or the synonym set after the step of determining if the predetermined synonym acceptance criterion is fulfilled, wherein, if

the synonym set was updated, said comparison to the synonym set comprises comparison to the updated synonym set.

25. (Previously Presented) A computer-readable record medium having stored thereon computer-executable instructions for causing a computer to perform a method for updating a synonym set to tolerate writing variation in input data when the synonym set is used in searching for counterparts for data records, wherein a data record contains a data field representing an identifier, and members of the synonym set are first identifier values referring to respective second identifier values, the second identifier values being predetermined identifier values, the method of updating the synonym set comprising the steps of:

determining among the predetermined identifier values at least one synonym candidate relating to the value of the data field in the data record using a candidate selection criterion,

determining if the value of the data field and a synonym candidate fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, wherein said at least one quality parameter takes into account writing variations that are evaluated based on differences in the value of the data field and the synonym candidate, and

when the predetermined synonym acceptance criterion is fulfilled, automatically adding the value of the data field to the synonym set as a member referring to the synonym candidate without intervention of a user and before the synonym set is used in searching for a counterpart for the data record from the synonym set.

26. (Currently Amended) A data processing system comprising a processor for tolerating writing variations in input data when processing data records for finding counterparts in a reference data set, the system comprising:

means for receiving data records,

memory means for storing the reference data set,

means for storing predetermined identifier values for an identifier,

means for determining in the data records values of a data field, the data field representing the identifier,

means for associating values of the data field and respective predetermined identifier values as synonyms, said means configured to determine from the predetermined identifier values at least one synonym candidate for a value of the data field, to determine if a synonym candidate and the value of the data field fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, wherein said at least one quality parameter takes into account writing variations that are evaluated based on differences in the value of the data field and the synonym candidate, and when the predetermined synonym acceptance criterion is fulfilled, to associate the value of the data field and the synonym candidate as synonyms and to automatically add the ~~synonym-candidate~~ value of the data field to a synonym set representing known writing variations for the identifier and referencing to respective entries in the reference data set without intervention of a user before searching for a counterpart to provide an updated synonym set, and

means for searching counterparts in the reference data set for the data records by comparing values of data fields to entries of the reference data set and/or said updated synonyms set.

27. (Original) A data processing system as defined in claim 26, further comprising

means for storing a synonym set, members of said synonym set referring to respective predetermined identifier values,

wherein the means for associating values of the data field and respective predetermined identifier values as synonyms are configured to add to the synonym set a member referring to the synonym associated with the value of the data field before activation of the means for searching counterparts.

28. (Previously Presented) A data processing system comprising a processor configured to update a synonym set stored in a computer readable database to tolerate writing variation in input data when the synonym set is used in searching for counterparts for data records, wherein a data record contains a data field representing an identifier, and members of the synonym set are first identifier values referring to respective second identifier values, said second identifier values being predetermined identifier values the system comprising:

memory means for storing the synonym set,

means for storing predetermined identifier values for the identifier,

means for receiving data records,

means for determining in the data records values of the data field, and

updating means for automatically adding to the synonym set a value of the data field and respective predetermined identifier values associated as synonyms without intervention of a user and before the synonym set is used for searching for counterparts for the data record from the synonym set, wherein said updating means are configured to determine from the predetermined identifier values at least one synonym candidate for the value of the data field, to determine if a synonym candidate and the value of the data field fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, said at least one quality parameter taking into account writing variations that are evaluated based on differences in the value of the data field and the synonym candidate, and when the predetermined synonym acceptance criterion is fulfilled, to associate the value of the data field and the synonym candidate as synonyms.

29. (Previously Presented) A data processing apparatus, comprising:

at least one processor configured to tolerate writing variations in input data when processing data records for finding counterparts in a reference data set, to determine in the data records values of a data field, the data field representing an identifier, to associate values of the data field and respective predetermined identifier values as synonyms, to determine from the predetermined identifier values at least one synonym candidate for a value of the data field, to determine if a synonym candidate and the value of the data field fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, wherein said at least one quality parameter takes into account writing variations that are evaluated based on differences in the value of the data field and the synonym candidate, and when the predetermined

synonym acceptance criterion is fulfilled, to associate the value of the data field and the synonym candidate as synonyms and to automatically add the value of the data field to a synonym set representing known writing variations for the identifier and referencing to respective entries in the reference data set to provide an updated synonym set without intervention of a user before searching for counterparts, to store the updated synonym set, and to search the counterparts in the reference data set for the data records by comparing the data records to entries of the reference data set values of data fields and/or said updated synonym set.

30. (Previously Presented) A data processing apparatus as defined in claim 29, comprising at least one memory configured to store a synonym set, members of said synonym set referring to respective predetermined identifier values, and wherein the at least one processor is configured to add to the synonym set stored in the at least one memory a member referring to the synonym associated with the value of the data field before activation of the search for counterparts.

31. (Previously Presented) A data processing apparatus comprising:

a processor configured to update a synonym set stored in a computer readable database to tolerate writing variations in input data when the synonym set is used in searching for counterparts for a data record, wherein the processor is configured to cause the update by determining from predetermined identifier values at least one synonym candidate for a value of a data field of data record, determining if a synonym candidate and the value of the data field fulfill a predetermined synonym acceptance criterion based on at least one quality parameter, wherein said at least one quality parameter takes into account writing variations that are evaluated based on differences

in the value of the data field and the synonym candidate, and when the predetermined synonym acceptance criterion is fulfilled, associating the value of the data field and the synonym candidate as synonyms, and thereafter automatically adding to a synonym set representing known writing variations for the identifier, referencing to respective entries in the reference data set and stored in a memory a value of the data field without intervention of a user to update the synonym set before use of the synonym set by a searching system configured to search for counterparts by comparing the value of the data field to the updated synonym set.